

ARIZONA WESTERN COLLEGE
SYLLABUS

EGR 286 ENGINEERING DESIGN – THE PROCESS

Credit Hours: 3 Lec 3

PREREQUISITES: EGR 186 and EGR 180

COREQUISITE: EGR 180

COURSE DESCRIPTION

The process of engineering design, mechanisms and controls, computer and programming skills, teamwork and project management, written and oral communications.

1. COURSE GOALS

- 1.1 Develop understanding of the design process and thoroughly explain the requirements of each step in the process, their interconnectedness, the role of constraints in design, and what constitutes a successful project.
- 1.2 Contribute to a team project, demonstrate professional and ethical behaviors, and effectively communicate to the team and others via oral, visual and written channels.
- 1.3 Learn to write basic programs in a C-based language and comprehend simple control protocols.
- 1.4 Learn to build simple mechanical devices (e.g. gears, motors, drive trains).
- 1.5 Develop logical and abstract thought processes.

2. OUTCOMES

Upon satisfactory completion of this course, students will be able to:

- 2.1 demonstrate the fundamentals of organizing and presenting technical work.
- 2.2 demonstrate the ability to perform technical work and resolve conflicts in groups and teams.
- 2.3 demonstrate the behaviors of effective problem solving.
- 2.4 create useful presentations of artifacts and processes.
- 2.5 demonstrate a working knowledge of the role of the customer in defining quality.
- 2.6 demonstrate the ability to meet customer-defined specifications.
- 2.7 evaluate, analyze, and solve engineering measurement problems.
- 2.8 demonstrate good note-taking habits and data management techniques.

3. METHODS OF INSTRUCTION

- 3.1 Lecture
- 3.2 Discussions
- 3.3 Audiovisual materials
- 3.4 Printed materials
- 3.5 Demonstrations
- 3.6 Computer assisted instruction

4. LEARNING ACTIVITIES

- 4.1 Individual assignments
- 4.2 Team design projects
- 4.3 Non-project team assignments
- 4.4 Final Exam

5. EVALUATION

- 5.1 Individual and team assignments
- 5.2 Team design projects
- 5.3 Team design final project
- 5.4 Individual final exam

6. STUDENT RESPONSIBILITIES

- 6.1 Under AWC Policy, students are expected to attend every session of class in which they are enrolled.
- 6.2 If a student is unable to attend the course or must drop the course for any reason, it will be the responsibility of the student to withdraw from the course. Students who are not attending as of the 45th day of the course may be withdrawn by the instructor. If the student does not withdraw from the course and fails to complete the requirements of the course, the student will receive a failing grade.
- 6.3 Americans with Disabilities Act Accommodations: Arizona Western College provides academic accommodations to students with disabilities through AccessABILITY Resource Services (ARS). ARS provides reasonable and appropriate accommodations to students who have documented disabilities. It is the responsibility of the student to make the ARS Coordinator aware of the need for accommodations in the classroom prior to the beginning of the semester. Students should follow up with their instructors once the semester begins. To make an appointment call the ARS front desk at (928) 344-7674 or ARS Coordinator at (928) 344-7629, in the College Community Center (3C) building, next to Advising.
- 6.4 Academic Integrity: Any student participating in acts of academic dishonesty—including, but not limited to, copying the work of other students, using unauthorized “crib notes”, plagiarism, stealing tests, or forging an instructor’s signature—will be subject to the procedures and consequences outlined in AWC’s Student Code of Conduct.
- 6.5 Texts and Notebooks: Students are required to obtain the class materials for the course.